

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

Received

10 NOV 2005

PCT

11 NOV 2005

To:

LLOYD WISE, McNEIGHT & LAWRENCE
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Lloyd Wise, McNeight & Lawrence

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY

(PCT Rule 71.1)

Date of mailing

(day/month/year)

08.11.2005

Applicant's or agent's file reference
MP100622-WO

IMPORTANT NOTIFICATION

International application No.
PCT/GB2004/003381

International filing date (day/month/year)
05.08.2004

Priority date (day/month/year)
05.08.2003

Applicant
UNIVERSITY OF MANCHESTER

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

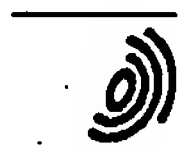
The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/B/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:

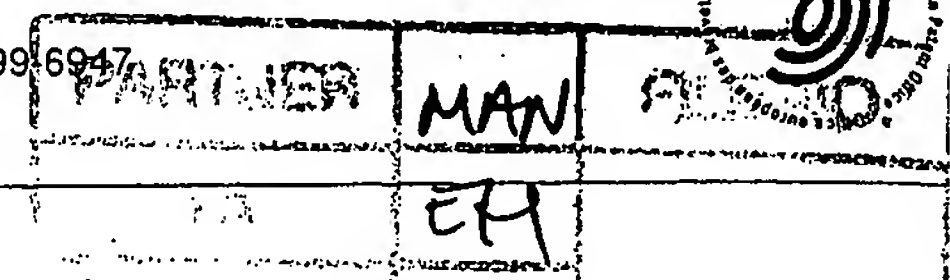


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PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference MP100622-WO	FOR FURTHER ACTION		See Form PCT/PEA416
International application No. PCT/GB2004/003381	International filing date (<i>day/month/year</i>) 05.08.2004	Priority date (<i>day/month/year</i>) 05.08.2003	
International Patent Classification (IPC) or national classification and IPC D04B15/48			
Applicant UNIVERSITY OF MANCHESTER			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i>) a total of 5 sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. II Priority</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. VI Certain documents cited</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 04.03.2005		Date of completion of this report 08.11.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Uhlig, R Telephone No. +49 89 2399-7083	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/003381

IP20 Res'd PCT/PTO 02 FEB 2006

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-26 as originally filed

Claims, Numbers

1-12 received on 11.04.2005 with letter of 07.04.2005

13-27 filed with telefax on 19.09.2005

Drawings, Sheets

1/7-7/7 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/003381

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 8-11, 14, 20-22, 25

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 8-11, 14, 20-22, 25

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/003381

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7, 12, 13, 15-19, 23, 24, 26, 27
	No: Claims	
Inventive step (IS)	Yes: Claims	1-7, 12, 13, 15-19, 23, 24, 26, 27
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-7, 12, 13, 15-19, 23, 24, 26, 27
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

PCT/GB2004/003381

1. References

Reference is made to the following document cited in the international search report:

D1: US-A-3 327 499

RE Item V**2. Independent Claim 1**

- 2.1 Based on the documents mentioned in the search report, the subject-matter of claim 1 appears to be new and inventive according to Articles 33 (1) and 33 (3) PCT.
- 2.2 Document D1, col. 3, li. 35-39; claim 1; col. 5, li. 5-10; Fig. 1 & col. 5, li. 31-41 & col. 5, li. 67 - col. 6, li. 5 appears to disclose the preamble of claim 1.
- 2.3 The subject-matter of claim 1 differs by the characterizing portion of claim 1.
- 2.4 The objective problem to be solved by this distinguishing feature may therefore be regarded as reliably feeding yarn at a constant tension for all kinds of knitting patterns.
- 2.5 None of the cited prior art documents disclose the characterizing features. With the features of the characterizing portion a closed loop control is provided.
- 2.6 Consequently claim 1 fulfills the requirements according to Articles 33 (1), 33 (2) and 33 (3) PCT, as the solution of the present problem provided by claim 1 is not obvious.

3. Independent Claim 16

- 3.1 Based on the documents mentioned in the search report, the subject-matter of claim 16 appears to be new and inventive according to Articles 33 (1) and 33 (3) PCT.
- 3.2 The line of argument provided for apparatus claim 1 analogously applies to method claim 16.

4. Dependent Claims 2-7, 12, 13, 15, 17-19, 23, 26, 27

The dependent claims 2-7, 12, 13, 15, 17-19, 23, 26, 27 are regarded - from a formalistic point of view - as being new and inventive, as they refer directly or indirectly to independent claims 1 or 16 which are considered to be new and inventive.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/GB2004/003381

RE Item VII

7. Formal/Further Objections

- 7.1 The applicant has changed the dependency at least of claim 24. No basis in the application as originally filed for this amendment is provided and consequently the examiner cannot verify whether this amendment introduces subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT.
- 7.2 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 7.3 The document D1, which is considered to be the most relevant prior art document, is not identified in the description and its relevant contents is not indicated as required by Rule 5.1(a)(ii) PCT.
- 7.4 The application does not comply with the requirements of Article 5 PCT in combination with the PCT Guidelines 4.26 as neither the relevant matter of the cited documents introduced in the description with the phrase "incorporated herein by reference" is expressly incorporated into the description and the phrase "incorporated herein by reference" is deleted nor is said phrase just deleted.
- 7.5 The description is not adapted to the set of claims.

IAP20 Rec'd PCT/PTO 02 FEB 2006

- 27 -

CLAIMS

1. A knitting machine comprising at least one knitting needle; at least one positive yarn feed device for feeding yarn to said at least one knitting needle; needle
5 monitoring means for providing information relating to the at least one knitting needle during the course of a knitting operation; and a controller for controlling the operation of the positive yarn feed device

CHARACTERISED IN THAT

- the needle monitoring means are adapted to provide needle selection data, the controller
10 being adapted to receive such data from the needle monitoring means during the course of a knitting operation; use said data to calculate a desired amount of yarn to be fed to a knitting needle; and control the positive yarn feed device to feed the desired amount of yarn to the knitting needle during the course of the knitting operation.

- 15 2. A knitting machine according to claim 1 in which the positive yarn feed device comprises a servomotor which is controlled by the controller.

3. A knitting machine according to claim 1 or claim 2 further comprising at least one stitch cam, in which the operation of the stitch cam is controlled by the controller
20 during the course of a knitting operation.

4. A knitting machine according to claim 3 including a stitch cam motor for varying the position of said stitch cam, and the operation of the stitch cam motor is controlled by the controller during the course of a knitting operation.

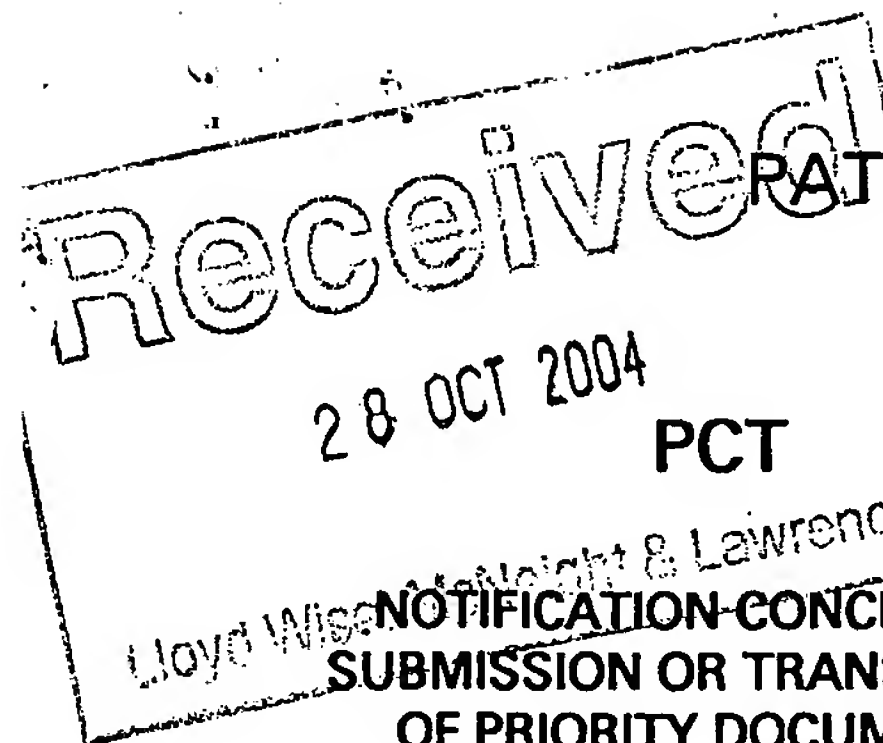
25

5. A knitting machine according to claim 4 in which the stitch cam motor comprises a stepper motor.

6. A knitting machine according to claim 4 in which the stitch cam motor comprises a servomotor.
7. A knitting machine according to any of claims 3 to 6 in which the controller
5 controls the operation of the stitch cam so as to produce knitted loops of predetermined characteristics, preferably a predetermined stitch length.
8. A knitting machine according to any preceding claim including fabric take
10 down means, in which the operation of the fabric take down means is controlled by the controller during the course of a knitting operation.
9. A knitting machine according to claim 8 in which the fabric take down means
15 comprises a fabric take down motor, and the operation of the fabric take down motor is controlled by the controller during the course of a knitting operation.
10. A knitting machine according to claim 9 in which the fabric take down motor
comprises a servomotor.
11. A knitting machine according to any of claims 8 to 10 in which the controller
20 controls the operation of the fabric take down means in accordance with the stitch length employed by the knitting machine.
12. A knitting machine according to any preceding claim further comprising
25 tension measuring means for measuring the tension of yarn fed to the at least one knitting needle; in which the yarn tension measured by the tension measuring means is communicated to the controller, and the controller utilises the measured yarn tension to control the knitting operation.

19. A method according to claim 17 or claim 18 in which the operation of the stitch cam is controlled so as to produce knitted loops of predetermined characteristics, preferably a predetermined stitch length.
20. A method according to any of claims 17 to 19 including the step of controlling the operation of fabric take down means during the course of the knitting.
21. A method according to claim 20 in which the step of controlling the fabric take down means comprises controlling the operation of a fabric take down motor.
22. A method according to claim 20 or claim 21 in which the operation of the fabric take down means is controlled in accordance with the stitch length employed during the knitting.
23. A method according to any of claims 16 to 22 including the step of measuring the tension of yarn fed to the at least one knitting needle, and wherein the measured yarn tension is utilised to control the knitting.
24. A method according to claim 17 and claim 23 in which the operation of the stitch cam is controlled in accordance with the measured yarn tension.
25. A method according to claim 20 and claim 23 in which the operation of the fabric take down means is controlled in accordance with the measured yarn tension.
26. A method according to any of claims 16 to 25 in which the stitch length is varied.

27. A method of knitting according to any of claims 16 to 26 performed on a flat bed knitting machine.



PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

To:

MCCALLUM, Graeme, David
 Lloyd Wise, McNeight & Lawrence
 Highbank House
 Exchange Street
 Stockport
 Cheshire SK3 0ET
 United Kingdom

**NOTIFICATION CONCERNING
 SUBMISSION OR TRANSMITTAL
 OF PRIORITY DOCUMENT**

(PCT Administrative Instructions, Section 411)

Date of mailing (day/month/year) 21 October 2004 (21.10.2004)	
Applicant's or agent's file reference MP100622-WO	IMPORTANT NOTIFICATION
International application No. PCT/GB2004/003381	International filing date (day/month/year) 05 August 2004 (05.08.2004)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 05 August 2003 (05.08.2003)
Applicant UNIVERSITY OF MANCHESTER INSTITUTE OF SCIENCE AND TECHNOLOGY et al	

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- (If applicable) The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- (If applicable) An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
05 Augu 2003 (05.08.2003)	0318271.4	GB	18 Octo 2004 (18.10.2004)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.89.65	Authorized officer Nathalie Mansiet Telephone No. (41-22) 338 8318
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PATENT COOPERATION TREATY

29 MAR 2005

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

LLOYD WISE, McNEIGHT & LAWRENCE
c/o Commonwealth House
1-19 New Oxford Street
London WC1A 1LW
United Kingdom

Date of mailing (day/month/year)

22 March 2005 (22.03.2005)

Applicant's or agent's file reference

MP100622-WO

IMPORTANT NOTIFICATION

International application No.

PCT/GB2004/003381

International filing date (day/month/year)

05 August 2004 (05.08.2004)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

UNIVERSITY OF MANCHESTER INSTITUTE
OF SCIENCE AND TECHNOLOGY
PO Box 88
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United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☒ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

THE UNIVERSITY OF MANCHESTER
PO Box 88
Sackville Street
Manchester
Lancashire M60 1QD
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned
☐ the International Searching Authority ☐ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Facsimile No. (41-22) 338.89.65

Telephone No. (41-22) 338 8021

Abderrazak SMIAHI	FILE NO.
PARTNER	MAN
TA	EP
RECORDED	GP
	006641319
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	622 WO